

2017 臺美碳捕獲與封存國際研討會

2017 Taiwan-US International CCS Conference



指導單位：經濟部能源局
主辦單位：工業技術研究院
經濟部CCS研發專署



經濟部能源局為加強我國減碳技術發展與國際合作，在「臺美淨煤與先進能源系統技術國際合作協定」架構下，推動與美國能源部國家能源技術實驗室 (National Energy Technology Laboratory, NETL) 之技術合作，希望借重美方在碳捕獲與封存技術先導試驗及示範計畫之寶貴經驗與我方進行交流，讓我國的技術發展與國際接軌，並取得相關研究最新進展。

為擴大臺美國際合作成效與資訊之擴散，本年度規劃於 4 月 18~19 日辦理「2017 臺美碳捕獲與封存國際研討會」，將邀請美國多所國家實驗室及知名大學之碳捕獲與封存專家來台，與台灣專家學者及產業界共同研討，期望透過對話激盪火花，共同擘劃國內碳捕獲與封存技術發展與推動藍圖。

本次會議主題包括：

1. 化學迴路技術
2. 燃燒後二氧化碳捕獲技術
3. 二氧化碳捕獲技術-其他
4. 封存場址特性調查
5. 監測與風險評估技術

會議時間：2017 年 4 月 18 日~2017 年 4 月 19 日(星期二、三)

會議地點：台大醫院國際會議中心四樓會議廳(臺北市徐州路 2 號)

執行單位：工業技術研究院

線上報名網址 <https://goo.gl/G3tvib>



DAY-1: TUESDAY, APRIL 18, 2017

Time	Agenda	Chairman
09:00 – 09:30	Registration	
09:30 – 09:40	Opening and Welcome Remarks	TBD
09:40 – 09:50	Group Photo	
09:50 – 10:40	<i>Keynote Speech - The Changing US Energy Landscape</i> David Mohler	
10:40 – 11:00	Break	
Session 1: Chemical Looping		
11:00 – 11:25	<i>Operating Experience of a 50 kW Chemical Looping Combustion Rig at NETL: Insight for Scale-up</i> Dr. Sam Bayham, NETL	Young Ku NTUST
11:25 – 11:50	<i>Oxygen Carrier Development for Chemical Looping</i> Dr. Ranjani Siriwardane, NETL	
11:50 – 12:15	<i>Development Iron-based Moving Bed Chemical Looping System for Hydrogen Generation in ITRI</i> Dr. Cheng-Hsien Shen, ITRI	
12:15 – 12:30	Q&A	
12:30 – 13:30	Lunch	
Session 2: CO₂ Capture		
13:30 – 13:55	<i>Computational Tools and Models for CO₂ Capture</i> Dr. David Mebane, West Virginia University	R. Siriwardane, NETL
13:55 – 14:20	<i>Techno – Economic Evaluation of Advanced CO₂ Capture Technologies for Fossil Fuel Power Plants</i> Dr. Hari Chandan Mantripragada, Carnegie Mellon University	
14:20 – 14:45	<i>Recent Advances of Chemical Looping Process Technology at Taiwan Tech.</i> Dr. Yu-Lin Joseph Kuo, NTUST	
14:45 – 15:00	Q&A	
15:00 – 15:15	Break	
Session 3: Site Characterization		
15:15 – 15:40	<i>Site Characterization for Carbon Storage</i> Dr. Yee Soong, NETL	Shoung Ouyang ITRI
15:40 – 16:05	<i>Offshore CO₂ Storage Resource Assessment</i> Dr. Jack C. Pashin, Oklahoma State University	
16:05 – 16:30	<i>Progress of Carbon Storage Assessment in Taiwan by MoST Research Program</i> Dr. Andrew T. Lin, NCU	
16:30 – 16:55	<i>Site Characterization - Changbin</i> Dr. Chung Huang, Taipower	
16:55 – 17:10	Q&A	
17:10	Adjourn	

DAY-2: WEDNESDAY, APRIL 19, 2017

Time	Agenda	Chairman
09:30 – 09:40	<i>Welcome Remarks</i>	
09:40 – 10:30	<i>Keynote Speech - CCS: A Technology Whose Time Has Come</i> Mr. Tom Tarka, NETL	TBD
10:30 – 10:50	Break	
Session 4: CO₂ Capture		
10:50 – 11:15	<i>Advanced Solvents for CO₂ Capture</i> Dr. Roger D. Aines, LLNL	Chung-Sung Tan NTHU
11:15 – 11:40	<i>Diversification of the Basic Immobilized Amine Sorbents (BIAS) for the Capture of Carbon Dioxide</i> Mr. McMahan Gray, NETL	
11:40 – 12:05	<i>Development of CO₂ Capture Technique: Modeling, Process Design, and Scale – Up</i> Dr. Shi-Shang Jang, NTHU	
12:05 – 12:20	Q&A	
12:20 – 13:20	Lunch	
Session 5: Monitoring / Risk Assessment		
13:20 – 13:45	<i>Distributed Fiber Optic Arrays: Integrated Seismic Sensing for Detection of CO₂ Flow, Leakage and Subsurface Distribution</i> Mr. Robert Trautz, Electric Power Research Institute	Andrew T. Lin NCU
13:45 – 14:10	<i>Quantitative Risk Assessment for Geologic Carbon Storage – U.S. DOE's National Risk Assessment Partnership</i> Dr. Robert Dilmore, NETL	
14:10 – 14:35	<i>Quantitative risk analysis for triggering earthquake due to CO₂ injection in a seismic prone area</i> Dr. Chi-Wen Yu, Sinotech Inc.	
14:35 – 14:50	Break	
14:50 – 15:15	<i>An Adaptive Management Approach for Monitoring CO₂ Storage</i> Mr. Charles D. Gorecki, Energy & Environmental Research Center	
15:15 – 15:40	<i>Monitoring and Risk Assessment Technology Development in ITRI</i> Dr. Chi-Wen Liao, ITRI	
15:40 – 15:55	Q&A	
15:55 – 16:55	Panel Discussion	Hsiao-Kang Ma TCCSUA
16:55 – 17:00	Closing Remarks	NETL ITRI

美方講者

David Mohler

David Mohler served as the Deputy Assistant Secretary for Clean Coal and Carbon Management within the Office of Fossil Energy at the U.S. Department of Energy. In this capacity, he was responsible for the DOE's R&D program in advanced fossil energy systems, large demonstration projects, carbon capture, utilization, and storage (CCUS), and clean coal technology deployment.

Samuel Bayham

Research Scientist, NETL

Dr. Samuel Bayham is a research engineer with the Thermal Science team in the Energy Conversion Engineering department at the National Energy Technology Laboratory. He was hired in 2015 to lead the reaction team within Thermal Science, which focuses on the field of chemical looping combustion.

Yee Soong

Chemical Engineer, NETL

Yee Soong (NETL) is a researcher in the National Energy Technology Laboratory's Biogeochemistry & Water Team under Research & Innovation Center in Pittsburgh. His research areas include syngas catalysis, reaction kinetics, reactor engineering, hydrodynamics, solid-solid separations, nanoparticles, enhanced oil recovery, CO₂ capture, and CO₂ sequestration.

Tom Tarka

Senior Engineer, NETL

Tom is a senior engineer within the Strategic Initiatives Group at the National Energy Technology Laboratory (NETL). He began his career at NETL in 2003, supporting the Carbon Capture and Storage (CCS) program, evaluating novel capture systems and building the cost and design models necessary to guide CCS research. In the ensuing years, he has specialized in exploring the innovative pathways for responsible use of fossil fuels through the design and evaluation of novel energy systems.

Ranjani Siriwardane

Research Scientist, NETL

Dr. Ranjani Siriwardane is a research scientist at National Energy Technology Laboratory. She leads the oxygen carrier development research work in both chemical looping combustion and chemical looping gasification at NETL.

McMahan L. Gray

Physical Scientist, NETL

McMahan L. Gray received his BS in Chemistry for the University of Pittsburgh in 1980. His initial position was an Organic Process Chemist at the Koppers Company located in Pittsburgh Pa. Then he was hired at NETL in 1986 and he has worked in Coal Preparation Division, Project Management, Separation and Gas Division, and Fundamental Materials Development Division over his employment as a Chemist and Physical Scientist.

Robert Dilmore

Principal Investigator, NETL

Robert Dilmore is a research engineer at the U.S. Department of Energy's National Energy Technology Laboratory, working on characterizing technical and environmental performance of engineered geologic systems. Dr. Dilmore's primary research areas include quantitative assessment of environmental risk performance of geologic CO₂ storage site, understanding dynamics of flow in fractured and porous geologic media, and characterization of subsurface fluid-rock interaction in geologic environments.

Hari Chandan Mantripragada

Research Scientist, Engineering and Public Policy, Carnegie Mellon University

Mantripragada's current research deals with developing computer-based analytical models for techno-economic evaluation of advanced CO₂ capture technologies for fossil fuel power plants. These models are incorporated into the Integrated Environmental Control Model (www.iecm-online.com). His general research interests deal with clean energy and climate change mitigation technologies.

Jack C. Pashin

Professor and Devon Chair of Basin Research School of Geology at Oklahoma State University

Jack Pashin develops advanced geoscience curriculum and running competitive, multi institutional research programs. His innovative, award-winning research focuses on the geological aspects of exploration, development, and environmental management of unconventional and conventional hydrocarbon reservoirs and geologic carbon sinks.

David Mebane

Assistant Professor, Mechanical and Aerospace Engineering, West Virginia University

David Mebane is the leader of the newly-established Energy Systems and Materials Simulation Group at WVU. The group is dedicated to the optimal integration of fine-scale scientific information into models at the industrial scale. Dr. Mebane is a materials scientist focused on theoretical and statistical approaches in solid-state chemical and electrochemical systems.

Roger D. Aines

Energy Program Chief Scientist
Lawrence Livermore National Laboratory

Dr. Roger Aines' current research interest is carbon dioxide capture and storage, natural gas production and use, development of catalysts for carbon dioxide capture, management of pressure in geologic sequestration through brine withdrawal and treatment, encapsulation of carbon dioxide capture solvents, and integration of computational and experimental methods in earth science.

Charles D. Gorecki

Director of Subsurface R&D at the Energy and Environmental Research Center (EERC)

Charles D. Gorecki is the Director of Subsurface R&D at the EERC, where he is responsible for developing and managing programs and projects focused on conventional, unconventional, and enhanced oil and gas production; the geologic storage of CO₂; geothermal; and other energy and environmental research. He currently serves as the Program Manager for the Plains CO₂ Reduction (PCOR) Partnership.